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VACCINATION OF SOWS WITH PORCILIS ®APP, STELLAMUNE®MYCOPLASMA AND ATRINORD ®DO

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Introduction and Objectives

Respiratory diseases cause considerable economic losses in the pig industry worldwide. In an effort to minimize losses, the use of vaccines is widespread.
The aim of the experimental study reported here was to compare single vaccine immunization to simultaneous immunization with three vaccines in sows. After farrowing the immune response in the piglets was studied until weaning at 3 weeks of age.

Material and Methods

The study included 36 Y-L crossbred sows from a 170-sow herd, free from infection with *Actinobacillus pleuropneumoniae* serotypes 1, 2, 5 and 8 and toxigenic *Pasteurella multocida,* but known to be infected with *A. pleuropneumoniae* serotypes 6 and 12 and *Mycoplasma hyopneumoniae.* Only sows with parity ≥ 2 and showing no signs of disease were included in the experiment.
The 36 sows were randomly assigned to five different groups according to table 1 and vaccinated 1st time 6 weeks before expected farrowing and 2nd time 3 weeks before expected farrowing. Vaccines against *A. pleuropneumoniae* (Porcilis ®APP Vet, Intervet), *M. hyopneumoniae* (Stellamune ® Mycoplasma Vet Orion) and toxigenic P. *multocida* (Atrinord ® DO Vet, Intervet) were used. The vaccines were given IM behind the ear.

Table 1. Vaccine schedule for sows in the experiment

Group	No sows	Vaccine	Dose
CONTROL	6	Porcilis adjuvant	9 ml
AP	6	Porcilis ® APP	2 ml
MYC	6	Stellamune ®	2 ml
PM	6	Atrinord ® DO	2 ml
MIX	12	All 3 vaccines	3x 2 ml

Blood samples were obtained from the sows at the time of the 1st and 2nd vaccination, and at farrowing. From all the piglets after the 36 sows blood samples were obtained at 1st, 2nd and 3rd week of life. Antibodies against *M. hyopneumoniae* (MH) and toxigenic *P. multocida* (PMT) were measured as OD% in blocking ELISAs (1,2). A low OD% corresponds to a high antibody level. Furthermore, the serum samples were analysed for antibodies against ApxI-III toxins by indirect ELISA (3). Titers were measured as log2 values.
Analyses of variances were performed to compare number of live borne piglets, antibody level in sows and antibody level in piglets between the groups. A significance level of 5% was used.

Results and Discussion

No abortions were observed and there were no significant differences between numbers of liveborne pigs among groups (P=0.32).
There was a significant increase in antibody levels to MH, PMT, ApxI and ApxIII in sows at farrowing, independent of single vaccination or simultaneous vaccination with three vaccines (table 2). The antibody levels MH, PMT, ApxI and ApxIII were found to be significantly higher in piglets after sows immunised with the respective vaccines compared to piglets after control sows up to 3 weeks of age (data not shown).

Table 2. Mean estimated sow antibody level (OD%) towards MH, PMT and ApxI-III toxins at 1st and 2nd vaccination and at farrowing (Farr.).

Antibody level		MH	PMT	ApxI	ApxII	ApxIII
Time	Group	Mean	Mean	Mean	Mean	Mean
1st	CONTROL	38.7^{a}	104.7^{a}	12.3^{a}	15.2^{a}	14.2^{a}
	AP	-	-	11.5^{a}	14.5^{a}	13.7^{a}
	MYC	69.2^{b}	-	-	-	-
	PM	-	95.3^{b}	-	-	-
	MIX	62.7^{b}	96.9^{b}	12.1^{a}	15.0^{a}	13.3^{a}
2nd	CONTROL	43.0^{a}	100.0^{a}	12.7^{a}	15.0^{a}	14.0^{a}
	AP	-	-	14.3^{b}	15.2^{a}	15.4^{a}
	MYC	6.3^{b}	-	-	-	-
	PM	-	73.0^{b}	-	-	-
	MIX	6.4^{b}	69.1^{b}	13.7^{ab}	15.5^{a}	15.3^{a}
Farr.	CONTROL	53.3^{a}	94.8^{a}	11.5^{a}	14.3^{a}	12.3^{a}
	AP	-	-	14.7^{b}	15.2^{a}	14.8^{b}
	MYC	2.2^{b}	-	-	-	-
	PMT	-	30.0^{b}	-	-	-
	MIX	6.5^{b}	23.3^{b}	14.4^{b}	15.3^{a}	14.4^{b}

[ab]Significant differences between groups at a time point (P<0.05). – Not included

The results showed that all vaccines induced a specific immune response in the serological test employed. However, while a significant immune response was observed against ApxI and ApxIII no significant increase was observed for ApxII.
In conclusion, no reduction in immune response was observed when simultaneous immunization with three vaccines was compared to immunization with single vaccines.

References

1. Feld, NC et al., 1992. Vet. Microb., 30, 35-46.
2. Foged, NT et al., 1989. Vet. Rec., 125, 7-11.
3. Nielsen, R et al., 2000. Vet. Microb., 71, 81-87.

PROCEEDINGS

Poster Presentations

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